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TREASURE STATE HEALTH

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RHEUMATIC FEVER IN COLLEGE FRESHMEN

Montana continues to have a higher rate of rheumatic fever among its College Freshmen than the national rate, Frederick G. Brown, M.D., has announced. Dr. Brown is the SBH director of the Heart Disease Control Program. He says the study has involved six of Montana's colleges.

The College Freshmen Rheumatic Fever Study has been conducted in Montana for nine years and has consistently demonstrated that rheumatic fever is a significant problem in Montana. No reason is known for the higher incidence of rheumatic fever which is found in all of the Rocky Mountain States. The national rate of rheumatic fever and rheumatic heart disease in entering college freshmen has been found to be 17.5% cases per 1,000 students according to the report by Dr. Carl Marienfeld, et al, in the 1964 issue of Public Health Reports, while Montana's rate is 24 cases per 1,000 entering students.

Prevention

The Board's program, carried out in cooperation with representatives from each college staff is directed to the prevention of new attacks of rheumatic fever and to prevent recurrent attacks in those who have already suffered this disease. This study reveals that the program should be continued.

Penicillin Prophylaxis

While 55% of these Montana students have, at some time, taken penicillin prophylaxis to prevent second attacks of rheumatic fever, only 22% are on prophylaxis at the time they enter college. However, only 9% were on prophylaxis upon entering college from 1956-1960, thus showing a significant increase in the number of students remaining on prophylaxis over the years of the study.

While there is no complete agreement on how long patients who have had rheumatic fever should continue to take prophylactic medication to prevent further attacks, it is generally agreed that those who have damage to their hearts should continue to take the medication for the rest of their lives.

The American Heart Association states that the safest general procedure for all patients is to continue prophylaxis indefinitely. However, many physicians will suggest discontinuing prophylaxis after the patient has been on prophylaxis for ten years or after the patient is out of situations in which streptococcal infections are generally found, such as school, military service, or hospital environments.

Education Program

Part of this study, which is conducted by the Montana State Board of Health in cooperation with personnel from the colleges and physicians from the Montana Heart Association includes meetings at each college with the freshmen who have had rheumatic fever to discuss the disease with them and the importance of continuing on prophylaxis. These meetings are conducted utilizing group discussion in order that the students might reveal their misconceptions about the disease to gain an understanding of the necessity for prophylavtic medication.

Milton Brown, Microbiologist, Miss Edith Kuhns, Microbiological Laboratories Director, and John E. Forney, Ph. D., review procedures of the Board's microbiological laboratories. Dr. Forney, Assistant Chief, Laboratory Consultation and Development Section of the Laboratory Branch of the Communicable Consultation and Development Section of the Laboratory Branch of the Communicable Disease Center, Atlanta, Georgia, recently reviewed technical aspects of the laboratories program and procedures. Such technical reviews are at the request of the Microbiological Laboratories and assist in evaluating and up-dating procedures.

Appointments Made to . . .

Sanitarians' Council

Vernon Sloulin, Helena, was reappointed as the Secretary-Treasurer of the Montana Sanitarians' Registration Council for the 1965-1966 year. Appointments to this Council are made by the State Board of Health. Other appointments made at the May meeting of the Board were: Wyman Taylor, Bozeman, to membership until July 17, 1965, and Dick Isern, Lewistown, to July 17, 1968.

Rabid Bat Reported

John O. Bangemann, M.D., acting Health Officer for the Missoula City-County Health Department, reports that a rabid bat was found in Missoula County last month. Rabid bats have been found in Western Montana before, but this recent incident serves as a reminder to the danger of handling bats. It is imperative that children be taught that the practice of picking up bats is dangerous.

Warning Issued On . . .

Lead Poisoning

Studies conducted by the industrial hygiene section of the Board's Disease Control Division point to high concentrations of lead-in-air at many of Montana's places of business and industry. These high concentrations are potential sources of lead poisoning, Benjamin Wake, industrial hygiene engineer cautions.

The Board's staff has made detailed observations which indicate that cases of lead poisoning may be occurring although they are not being reported.

Among the hazardous situations which have been studied or observed are the following:

(1) In print shops where lead is remelted. In several situations the removal of the light fluffy oxidized lead from remelting furnaces in these establishments is sometimes done by high school boys. It is felt that in general these boys are not fully aware of the significance of the exposure to vapors and fumes of lead and therefore are not as cautious as they might have been.

(2) In a number of welding operations high concentrations of lead have been observed in the breathing zone of workers cutting or welding metals which previously had been painted with lead-base paints—particularly where old bridges or other similar structures were being dismantled or repaired. Several reports of lead poisoning among welders have been received, most of which occurred during the cutting or welding of old bridge members painted years ago with lead-base paints.

These studies found that only one out of 20 welding operations were provided with suitable local exhaust ventilation systems to reduce concentrations of lead and other oxides to which the worker was exposed. This was especially prevalent in field welding and burning operations where the avilability of local exhaust ventilation is sometimes poor, but does not preclude the exposure to high concentrations of lead and other oxides of metal, if the wind is insufficient to carry it away from the welder's breathing zone.

(3) From time to time reports have been received in which whole families have been made ill from the burning of discarded battery boxes in home heating stoves. In Great Falls, a few years back, a number of persons, including some children, died of lead poisoning. A number of others were made seriously ill from this procedure. In these instances the accumulated lead in and on the battery casings is oxidized by the hot flame produced, and is readily distributed throughout the rooms, especially in stoves that are poorly constructed and improperly operated and maintained.

(4) Lead poisoning continues to occur in smelters and other locations and probably is occurring in some persons doing radiator repair, tinning and other similar operations.

Lead Poisoning

Lead poisoning is a serious and debilitating disease. In industry, the chief danger is the inhalation of lead dust and fumes. The symptoms are gastro-intestinal disturbance, anemia and nervous manifestations. There is a loss of appetite and marked constipation with attacks of severe colic. Lead "palsy" may also result and is first noted as localized paralysis involving the small muscles of the hand or the extensors of the wrist and fingers. The condition develops slowly with very slow recovery. Lead encephalopathy is also the result of excessive exposure to lead fumes. It produces a rapidly progressive form of convulsions, wild delirium, insanity and death.

Absorption of lead may occur through the gastro-intestinal tract. This is a long, slow process.

Prevention

More than 100 occupations in which lead and its compounds serve as an occupational hazard have been listed. To prevent lead poisoning both management and labor must take the necessary precautions. The development of mechanical processes to remove the lead dust and fumes is essential, but also the worker must cooperate and understand the dangers of inhaling or ingesting lead, and take the necessary precautions.

FOOD AND DIET FADS . . .

Food fads and new diets, especially those for weight reduction, become popular because people want a simple answer to food and health problems, Mrs. Dorothea Davis says. Mrs. Davis is the nutritionist on the State Board of Health staff.

She says, even though people know there is no simple answer to nutrition problems, many succumb to the advertisements of "health food" stores, books on fad diets that are best sellers, and the questionable advice of friends, relatives or fellow workers.

Some follow the teachings of a food faddist—a person who is unduly concerned with dietary health, is ignorant of the scientific facts about food and health, but usually believes what he preaches. Others fall into the traps set by a food quack—one who is a cynical promoter, usually has something to sell, and rarely believes what he preaches.

Dangers

It is relatively common knowledge that only a physician can know a "whole" person well enough to diagnose and treat. But too often people postpone seeking nutritional advice from their physicians. This is probably because they know in advance that he is likely to prescribe some change in activity or diet which to them may be even more distasteful than a "bitter pill."

Nutritional self-diagnosis and self-treatment is particularly dangerous when a person has a pathological condition. The newest fad diet, Mrs. Davis says, is one for weight reduction, promising pleasant gourmet meals complete with a euphoric state of inebriation. This is an old diet idea that has appeared many times under various names, such as, "calories don't count," "air force diet," "low carbohydrate diet," and recently, "the drinking man's diet."

These diets are likely to be excessively high in protein and fat, and in the case of the "drinking man's diet," high in alcohol also.

For those who try a diet without the supervision of a physician there are several dangers. First, even though the individual knows someone who has lost weight on a diet prescribed by a physician, he himself may not have had a physical examination by a physician for years, and this may not be the diet which is right for him. If he tries the diet on-his-own he may not even live to regret it!

Second, because it is a human tendency to operate on the principle that "if one is good, two is twice as good" the person who puts himself on a diet may cut carbohydrate consumption excessively and induce a disorder known as ketosis. Or an individual might increase protein and fat enough to cause metabolic imbalances affecting the kidney and liver functions, and the cardio-vascular system.

Alcohol intake could be increased enough to initiate many kinds of metabolic disturbances not to mention the social, psychological and economic problems that could result.

The third reason such self-prescribed diets are not recommended is because of the high costs of these foods and the possibility of incurring medical expenses unnecessarily. Furthermore, the self-prescribed diets are likely to be low in some essential nutrients. A change in one major dietary constituent—calories, fat, protein or carbohydrate, produces a change

(Continued on page 4)

SALMONELLOSIS

Kenneth D. Quist, DVM, Atlanta, spoke on the increasing problems of salmonella infection at the annual meeting of the Montana Public Health Association which was held in Billings this spring. Dr. Quist is the chief of the Animal Breeding Sub-Unit, Laboratory Branch, Communicable Disease Center of the Public Health Service.

He said salmonellosis, a sometimes fatal intestinal infection, usually spread by contaminated food, has been on the increase in the United States for the past 22 years. In 1942, there were 504 cases reported while in 1963 there were 15,390 cases reported. This increase is graphically shown in Figure 1.

While some of this increase may be attributed to an increased awareness of the presence of the disease, it has become a serious public health problem. This is an indirect result of rapid technical advances in food processing and food distribution. Furthermore, Dr. Quist said current methods of control have not kept up with these technical advances that have made increased spread of the disease possible.

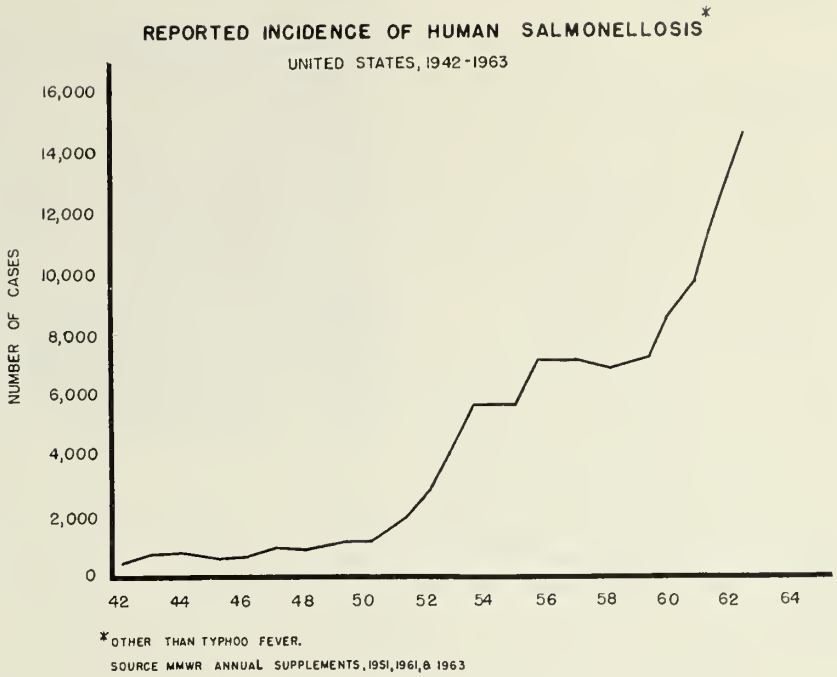

Fig. 1.

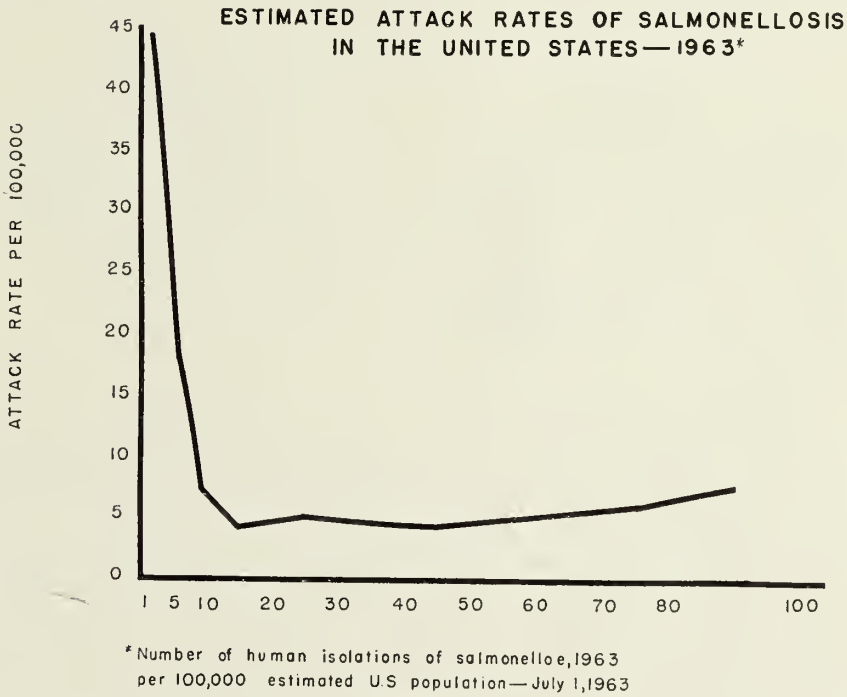

Fig. 2.

Spread of Salmonellosis

Salmonellosis is caused by bacteria—of which there are as many as 900 different types which are found in domestic animals, man and their environments. Human cases of salmonellosis usually come from domestic livestock, and the organisms are transmitted to man either directly from animals or through contaminated products of animal origin. Domestic poultry is probably the largest single reservoir. More than two-thirds of approximately 20,000 cultures isolated from animals between 1943 and 1963, were derived from domestic fowl.

Diseased hogs and cattle also create a major problem in the spread of salmonellosis. Frequently, widely distributed animal feeds are known to be heavily contaminated with salmonellae and provide an excellent means for the extensive spread of infection apparent in domestic animals and fowl.

Salmonella infections are prevalent in domestic pets such as dogs, cats and pet birds. Direct transmission of infection from dogs to man and vice versa, has been observed. Salmonellae have been found in rats, snakes, lizards, tortoises and insects such as flies and cockroaches. However, flies are thought to have little importance in transmitting the organisms to man.

In addition to the problem in poultry and meat, eggs—raw, dried or frozen—and food containing these products, have been found to be sources of salmonella outbreaks. Under proper conditions of temperature and humidity penetration of the egg shell is known to occur. Although the proportion is probably very low and extremely variable, an infected egg can contaminate a large batch of liquid, frozen or dried eggs, whenever temperatures during processing are suitable the salmonellae will multiply.

Recently salmonellae have been found in such foods as soya milk, dried yeast, coconut and cereal powder also.

Human Carriers

Human carriers of the disease too must be considered in efforts to control this disease. They are reported to be responsible for 26 out of 56 outbreaks of salmonellosis. Both infant and adult carriers are known to result from nursery outbreaks. In various surveys it has been noted that from 15 to 30 percent of salmonella cultures isolated from man were derived from persons without symptoms.

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SALMONELOSIS

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A constant carrier rate in the general population has been estimated to be from 2 to 50 per thousand.

Although it is difficult to determine whether the food handler is the source of infection or has been infected from the same source as the victims, it appears that the carrier state occurs much more frequently in this group of individuals than in the general population.

The most dramatic and highly publicized aspects of salmonellosis are the food-borne infections in which large groups of persons that have consumed a common contaminated food. In these cases the food has been prepared and held in such a manner that the bacteria have had an opportunity to multiply until they are present in relatively large numbers. The incubation periods of these infections usually range from 8 to 48 hours.

The salmonellosis is found most frequently in children under one year of age and the incidence rises again after 45 and is considerably increased at 80 and over, as is shown in Figure 2 page 3.

Controls

If control of this disease is to be accomplished, animals must not be fed food contaminated by salmonellae. In considering the role of the human carrier, it is necessary to stress the education of food service employees in the field of personal hygiene. It is also necessary to indoctrinate management in food establishments in the importance of requiring strict observance of proper sanitary practices.

The possibilities for immediate improvement in the commercial egg products and the various foods into which they are incorporated are encouraging. A number of commercial users of egg products are specifying that the materials which they purchase contain no detectable salmonellae. This requirement will undoubtedly be adopted more widely in the future. The pasteurization of all liquid egg products to be used in food preparation is required in Canada now.

Once the salmonellae gain entrance into a food preparation area, their presence contributes to the contamination of utensils and working surfaces. This makes it possible for either the direct or indirect transfer of salmonellae from one food to another. It also makes possible the production of the carrier state in persons preparing or storing the food.

Thorough cooking will kill the salmonellae but if the infection has been introduced there is still the opportunity to contaminate foods that may not be cooked. It also provides the opportunity to recontaminate the cooked items.

An intensive effort to reduce the incidence of salmonellosis among domestic animals seems to offer the greatest hope of excluding organisms from areas of food preparation, and by adhering to good sanitation practice in the preparation, storage and serving of foods.

Following the formal presentation of the salmonellosis problem, a panel discussion on the situation in Montana followed. Pictured above are: (Seated left to right): John Googins, M.D., M.P.H., Cascade City-County Health Officer; Ralph W. Seltzer, M.D.; Billings, Public Health Service Physician in the Indian Health Program; John W. Safford, DVM, Secretary of the Livestock Sanitary Board. (Standing): John S. Anderson, M. D., M.P.H., Helena, Executive Officer of the State Board of Health; Kenneth D. Quist, DVM, Atlanta, Chief, Animal Breeding Sub-unit, Laboratory Branch of the Communicable Disease Center, and E. J. Bowmer, M.D., Director, Division of Laboratories, Vancouver General Hospital, Vancouver, British Columbia.

FOOD FADS

(Continued from page 2)

in at least one other of these constituents.

Recommendations

There are no perfect foods, no miracle foods and there are no magic diets. Nutritional problems cannot be properly solved without medical supervision. The only safe self-prescribed diet for a normal healthy person who wishes to control his weight is one based on the minimum intake of foods listed in the "Basic Four Food Groups." This list includes (1) milk products, (2) fruits and vegetables (3) meat and meat substitutes, and (4) breads and cereals. He can eliminate all extra foods not on this list and those which are essentially high in calories, fat, carbohydrates and alcohol. By eating the minimum amounts recommended in the "Basic Four Food Groups" list, it is possible for a person to obtain an adequate number of calories, carbohydrates, proteins, fats, vitamins, minerals and bulk if he knows enough to choose those foods in each group which are highest in the essential nutrients, and not excessively high in calories.

Civil Rights Compliance

The Montana State Board of Health has the distinction of being one of the first State Health agencies in the United States to submit and have accepted a "Civil Rights Act Statement of Compliance and Methods of Administration."

Appreciation of the staff's cooperation was made in a letter to John S. Anderson, M.D., M.P.H., executive officer, from James E. Bondurant, M.D., Regional Medical Director of the Children's Bureau and H. W. Kassel, M.D., Regional Health Director of the Public Health Service. Both of these regional officers are in Denver.

A summary of the steps that will be taken in continuing the Board's policy of nondiscrimination and its increased implementation surveillance was published in last month's issue of this publication.

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